UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 W. JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604-3590

Reply to the Attention Of: SR-6J

December 17, 2008

Via E-mail and Certified Mail

Jennifer Hale
Weyerhaeuser Company
7800 E Orchard Road, Suite 200
Greenwood Village, CO 80111

RE: Preliminary Remedial Design Report
12th Street Landfill, Kalamazoo River Superfund Site Operable Unit #04
Plainwell, Michigan

Dear Ms. Hale:

The United States Environmental Protection Agency (EPA) and Michigan Department of Environmental Quality (MDEQ) have reviewed RMT's October 2008 Preliminary Design Report for *12th Street Landfill, Kalamazoo River Superfund Site Operable Unit #04, Plainwell, Michigan.* EPA has general and specific comments on the Preliminary Design Report. Although the Preliminary Design Report contains design details and calculations, additional supporting information will be required in future submittals to address these comments and further the design. The comments in this letter will be addressed in the Pre-Final Design Report.

General Comments

1. Gas Management – Design calculations and assumptions are required to ensure the gas management system will be adequate, including, but not limited to the following:
    a. What is the design capacity of the current passive design and potential future active design?
    b. What is the basis for operating the gas vents in the closed position?
    c. Additional information should be included in the details, sheet 6 of 8 to ensure installation is consistent with design calculations.
    d. Was the peat layer below the landfill considered when estimating amount of gas that could be produced within the landfill?
    e. Was the potential for drifting snow considered when determining the height of the vent outlet above the ground surface?

f. What considerations were made in the specific locations chosen for the landfill gas vents? Where other configurations considered?
g. The subsurface pipes for the gas venting system are 4-inch diameter and will be placed within a 6-inch sand layer. Will this provide enough of a cushion to prevent the pipes from being crushed by equipment used during construction of the cap?

2. Surface Water Management - The design is based upon a 25-year, 24 hour storm event.
    a. What provisions are planned for stormwater overflow if a larger storm event were to occur?
    b. Were additional storm events considered to determine the potential for failure of the design? This evaluation is required to document that the amount of erosion for the cap design will meet the requirements of Part 115.
    c. Were evaluations of the erosion potential performed for the walking path design and road around the site? Additional justification of the design is required.
    d. The eastern slope of the landfill was designed to be protective of a 100 year flood event. Why is the landfill cap designed to be protective of a 25-year storm event?

3. Slope Stability and Grading - Additional detail is required to ensure the waste material will not fail at a 4H:1V slope.
    a. How will the grading and consolidation be affected when the membrane is placed on the landfill?
    b. How will differential settling affect runoff design and passive gas venting layers?
    c. What assumptions were made on the variability of the underlying soils and peat layer and the potential for deformation and localized slip planes?

4. Post Closure Monitoring - The O&M plan appears to be lacking details for some components.
    a. What are the operation and maintenance activities and frequencies for the gas venting and monitoring?
    b. What is the frequency of regular maintenance activities, such as mowing, clearing and grubbing, rill repair and site inspections?

5. Additional information is required for the containerization, sampling, discharge and/or disposal of water pumped from the excavation.
    a. Offsite disposal should include the facility name, and sampling requirements.
    b. What is the proposed location of the discharge, sampling, energy dissipating devices, and sediment traps for onsite discharge?

Specific Comments

1. Page 29, Section 5.2 Performance Standards: The second bullet (and Table 5-2) indicates that post-excavation sampling will be performed in the asphalt plant and MDNR properties, but the wetlands will only be remediated to a visual performance standard. The ROD does not indicate that post-excavation sampling is only required in certain areas. Please clarify.

2. Page 38, Section 6.2.5 Excavation of Paper Residuals in Wetland North of the Landfill: See the previous comment. Please clarify why post-excavation sampling is not believed to be required in the wetlands.

3. Page 39, Section 6.2.5 Extent of Planned Excavations: Expand on "returned to the wetland in a manner equivalent to a permitted National Pollutant Discharge Elimination System (NPDES) discharge."

4. Page 41, Section 6.3.2 Global Slope Stability Evaluation, second paragraph: Please clarify how the sand placed as part of the cover will dewater the residuals. Is it by acting as a path for water that is squeezed out due to the surcharge loading of the cover?

5. Page 47, Section 6.6.2 Perimeter Landfill Gas Monitoring Network: The typical gas probe construction detail is shown in Detail 5 on Plan Sheet 7, not Detail 1.

6. Page 47, Section 6.7 Access Road: The last sentence states "Additional information regarding the gates is discussed in Section 6.7.2." There is no Section 6.7.2 in the document.

7. Page 56, Section 8.1 Groundwater Monitoring Network: The third paragraph and associated bullets identify potential methods for abandoning the existing wells and piezometers. Section 6.1 indicates "The groundwater monitoring wells and the leachate head wells will be abandoned by excavating 3 feet below the ground surface and cutting the casing off. The remaining well screen and casing will be left in place and tremie-grouted from the bottom up using high-solids bentonite grout." The text should be consistent between these sections.

8. Section 8.1 Groundwater Monitoring Network and Section 8.4 Groundwater Monitoring Program: The reference in Section 8.1 identifying the groundwater sample analytical parameter list (i.e., Table 4-2 in the PSVP in Appendix D) is not consistent with the tables included in Section 8.4. The Tables in Appendix D should reference the Target Compound and Target Analyte Lists (TCL/TALs) or specifically identify the analytes in these lists.

9. Section 8.1 Groundwater Monitoring Network. The three deep monitoring well locations proposed to be paired with three piezometers are identified as MW-101, MW-103, and MW-107. The locations identified on Figure 3-2 for installation of the piezometers are inconsistent with this text. This inconsistency should be addressed in Section 8.2.2 Vertical Aquifer Sampling. Vertical profiling is proposed to be performed at 10 foot intervals to a depth of 40 feet below the water table. Were shorter intervals considered? Will samples be collected when changes in hydraulic properties are observed? Will vertical profiling should continue beyond 40 feet

below the water table if contaminants are still detected above criteria? What method of vertical profiling will be used?

10. Page 58, Section 8.2.2 Vertical Aquifer Sampling: Should PCBs be analyzed with VOCs during the vertical aquifer sampling prior to monitoring well installation?

11. Page 58, Section 8.2.2 Vertical Aquifer Sampling: The specific method of vertical profiling (in addition to the technology type (i.e., Geoprobe)) should be identified in the design report.

12. Page 58, Section 8.2.2 Vertical Aquifer Sampling: The report includes the conceptual observation that "... this landfill would be expected to produce a plume that would be thick and diffuse." This is comes from a 1994 MDEQ position paper. Please explain how this statement is supported by the existing data set.

13. Page 60, Section 8.2.4 Well Development: Identify how the well development water will be managed.

14. Page 60, Section 8.2.4 Well Development: Be more specific as to which method will be used to develop wells. It is indicated in the report that the wells will be developed "... by surging and purging with a surge block and submersible pump system." It is not clear if it is intended to use both methods for the development of each well.

15. Page 61, Section 8.4 Groundwater Monitoring Program: In regard to the process for "reducing the frequency of monitoring and the analytical program", it must be recognized that the frequency of monitoring must be adequate to insure protection of human health and the environment consistent and compliant with Part 201. It is uncertain whether groundwater sampling at a frequency of once every five years (at a site directly adjacent its discharge point) can be shown to meet the requirements of Part 201.

16. Page 62, Section 8.4 Groundwater Monitoring Program: It is indicated in the report that water levels will be recorded two weeks and one week before groundwater sampling, to avoid sampling water inappropriately affected by surface water flow toward the site. Because of the close proximity between site wells and the river, it is appropriate to monitor water levels multiple times a week for the two weeks preceding sampling events and during the sampling event. It is also advised to begin sampling the wells closest to the river first to avoid leaving the site in the middle of a sampling event due to unanticipated groundwater reversals.

17. Appendix B, Slope Stability Calculations: Use of previous laboratory tests on similar materials for determination of interface friction is suitable at this stage as long as they are replaced with testing on actual materials once they have been determined and the calculations re-run.

18. Appendix C. Construction Quality Assurance Project Plan: Please include section on discharge and disposal of pumped water.

19. Appendix C, Construction Quality Assurance Project Plan: Please include section on evaluation of vegetation restoration.

20. Appendix C, Construction Quality Assurance Project Plan: What precautions will be taken to prevent heavy equipment from damaging the natural gas pipeline?

21. Appendix D, Performance Standards: Standards should be included for revegetation.

22. Appendix E, Specifications: Specifications should be included for:

    a. Well construction (identified in Section 1, but not included in Appendix E)
    b. Well abandonment (identified in Section 1, but not included in Appendix E)
    c. Staff gauge construction
    d. Landfill gas probe construction
    e. Fencing
    f. Surveying

23. Appendix E, Specifications: A separate seed mix should be considered for wetland restoration.

If you have any questions about these comments, please contact me at (312) 353-8983.

Sincerely,

Michael Berkoff
Remedial Project Manager

cc: J.Saric EPA
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